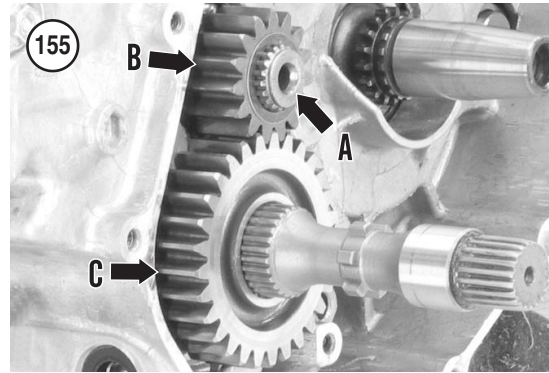


21. Install the front crankcase mounting bolts. Be sure to install the engine cover bracket (**Figure 153**). Tighten the crankcase mounting bolts in a crossing pattern to 12 N•m (106 in.-lb.).
22. Install the rear crankcase mounting bolts. Be sure to install the engine cover bracket (**Figure 154**). Tighten the crankcase mounting bolts in a crossing pattern to 12 N•m (106 in.-lb.).
23. Rotate the transmission shafts and crankshaft to ensure there is no binding. If there is any binding,



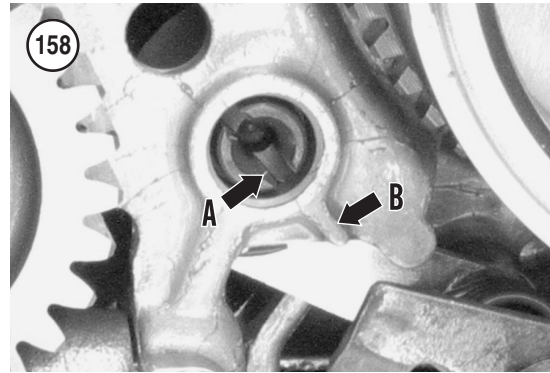
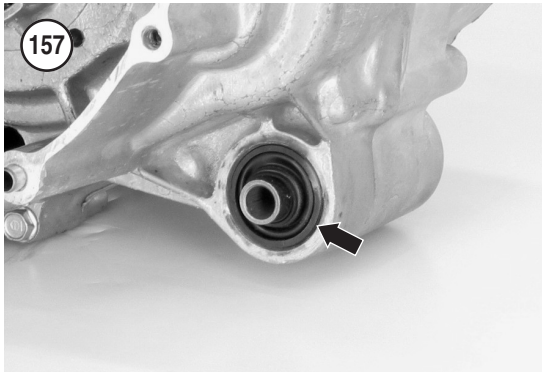
disassemble the engine as needed and correct the problem.

24. Perform *Transmission Shifting Check* in this chapter.
25. Install the drive gear (B, **Figure 155**) and driven gear (C). Install the drive gear so the splined end is out. Install the washer (A, **Figure 155**) next to the drive gear.
26. Inspect the engine mounting dust seal and bushing (**Figure 156**) sets for severe wear or damage.
27. Install the bushing sets so the outer dust seal lips face out as shown in **Figure 157**.
28. Install all exterior engine assemblies as described in this chapter and other related chapters.

TRANSMISSION SHIFTING CHECK

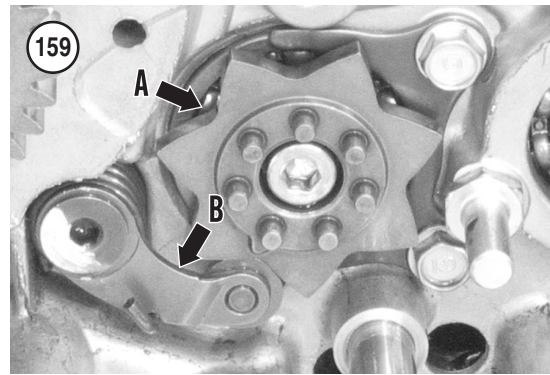
Transmission shifting can be checked with the engine mounted in the frame or with it sitting on the workbench. Always check transmission shifting after reassembling the engine cases.

1. Rotate the shift drum using the end slot (A, **Figure 158**) so the transmission is in neutral. Neutral



position is indicated when the end slot aligns with the boss (B, **Figure 158**) on the crankcase. When the transmission is in neutral, the countershaft and mainshaft will turn independently of each other (when one shaft is turned, the other shaft does not turn).

2. To check the forward gears (neutral and first through fifth gears), install the shift cam (A, **Figure 159**) and stopper arm (B) as described in *Crankcase Assembly* in this chapter. Turn the mainshaft or countershaft while turning the shifter drum counter-clockwise. The transmission is in gear when the stopper arm roller seats into one of the drum shifter segment ramps. When the transmission is in gear, the countershaft and mainshaft are engaged and will turn together.



3. To check the reverse gear, move the reverse lever (**Figure 160**) down to disengage it from the shift drum and then turn the shift cam (A, **Figure 159**) clockwise. The transmission should shift into reverse.

4. If the transmission does not shift properly into each gear, disassemble the engine and check the transmission and the internal shift mechanism.



ENGINE BREAK-IN

If the piston rings or a new piston were installed, the cylinder was honed or rebored, or major lower end work was performed, break in the engine as if it were new. The performance and service life of the

engine depends greatly on a careful and sensible break-in.

For the first 5-10 hours of operation, use no more than one-third throttle and vary the speed as much as possible within the one-third throttle limit. Avoid prolonged or steady running at one speed as well as hard acceleration.

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